

# PATENT ABSTRACTS OF JAPAN

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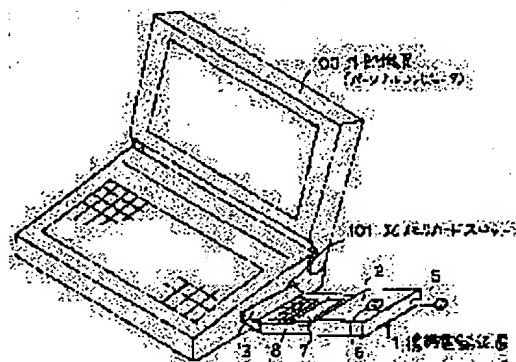
(54) PORTABLE TELEPHONE SET

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(57)Abstract:

PURPOSE: To obtain a portable telephone set in which data communication or the like is made available through the connection to an external equipment without use of an accessory such as an adaptor or a cord.

CONSTITUTION: A case 3 with a size equal to the width and the thickness of an IC memory card is provided to a part of a case for a portable telephone set 1 and an IC memory card connector is arranged to one end of the case 3. Furthermore, an IC memory card interface section is built in the IC memory card connector. The case 3 is inserted into an IC memory card slot 101 provided to an external device 100, then the portable telephone set 1 and the external device 100 are directly connected and the both are interfaced.



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 CLAIMS
 

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[Claim(s)]

[Claim 1] The cell phone unit characterized by constituting so that may have IC memory card connector in some cases of a cell phone unit, and the interior may be equipped with IC memory card interface section which performs electrical installation of telephone equipment and an external instrument, it may insert in IC memory card slot which prepared said IC memory card connector in the external instrument and connection with an external instrument may be made.

[Claim 2] The cell phone unit of claim 1 which has a case part for a dimension configuration equal to some cases in the width-of-face dimension and thickness dimension of IC memory card, and comes to arrange IC memory card connector in the end section of this case part.

[Claim 3] The cell phone unit of claim 2 which folds up a case to the main case and this main case, or consists of withdrawal subcases, forms this subcase in a width-of-face dimension equal to IC memory card, and a thickness dimension, and comes to arrange IC memory card connector in the point of this subcase.

[Claim 4] The cell phone unit of claim 3 which prepares a display throughout the abbreviation for the front face of the main case, and comes to prepare the key section for actuation in the front face of a subcase.

[Claim 5] The cell phone unit of claim 4 which constitutes and becomes so that it may have a display in the front face of a subcase and may function considering this display as the key section.

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DETAILED DESCRIPTION

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[Detailed Description of the Invention]

[0001]

[Industrial Application] Especially this invention relates to a cell phone unit equipped with the external interface which makes connection with an external instrument about a cell phone unit.

[0002]

[Description of the Prior Art] Forming the external interface in the cell phone unit, connecting with external instruments, such as a personal computer, through this external interface as the activity of the computing resource at the time of migration of a cell phone unit, i.e., implementation of mobile-computing service, and realizing data communication etc. in recent years is advanced. For example, it is drawing showing that example, and drawing 8 formed the connector 32 of dedication as an external interface in some cases 31 of a cell phone unit 1, it connected this connector 32 to the connector 33 of a personal computer 100, and has connected both. In this case, in order to take the electric and mechanical adjustment between each connector 32 of a cell phone unit 1 and a personal computer 100, and 33, in usual, adapter equipment 34 like an interface converter is used. Some which were indicated by JP,4-341043,A are one of this kind of things.

[0003]

[Problem(s) to be Solved by the Invention] However, it is always necessary to carry this adapter equipment with a cell phone unit and an external instrument, and in the topology of such a cell phone unit and an external instrument, since adapter equipment is needed, if it takes into consideration also carrying the power unit of adapter equipment in addition to this, that portability will become very bad. moreover -- the time of not possessing this adapter equipment -- a cell phone unit and an external instrument -- not being connectable -- as a mobile-computing terminal -- " -- always -- /-- there is a problem that it cannot respond to the wireless data service needs "anywhere.

[0004] When the code is not possessed even in this case, it is difficult to make connection with an external instrument, and it becomes impossible moreover, to correspond to the wireless data service needs described above as a result, although the configuration which connects a cell phone unit and an external instrument in code etc. through adapter equipment is also proposed.

[0005]

[Objects of the Invention] The object of this invention is to offer the cell phone unit which enabled connection with an external instrument, without using an adapter and a code. moreover, an adapter and a code will be used for them if other objects of this invention are the external instruments equipped with IC memory card slot -- things -- it is in offering the cell phone unit which made it possible to connect with these external instruments directly.

[0006]

[Means for Solving the Problem] The cell phone unit of this invention had IC memory card connector in a part of the case, and equips the interior with IC memory card interface section which performs electrical installation of telephone equipment and an external instrument, and it constitutes it so that it may insert in IC memory card slot which prepared IC memory card connector in the external instrument

and connection with an external instrument may be made.

[0007] For example, it has a case part for a dimension configuration equal to some cases in the width-of-face dimension and thickness dimension of IC memory card, and IC memory card connector is arranged in the end section of this case part. In this case, a case is folded up to the main case and this main case, or it constitutes from a withdrawal subcase, this subcase is formed in a width-of-face dimension equal to IC memory card, and a thickness dimension, and IC memory card connector is arranged in the point of this subcase. Moreover, a display is prepared throughout the abbreviation for the front face of the main case, and the key section for actuation is prepared in the front face of a subcase. Or it has a display in the front face of the main case, and has a display also in the front face of a subcase, and this display is constituted so that it may function also as the key section.

[0008]

[Function] A cell phone unit and an external instrument are directly connectable with IC memory card connector by making a subcase insert in IC memory card slot prepared in the external instrument by forming some cases, for example, a subcase, in the same specification as IC memory card, and arranging IC memory card connector in the point. Moreover, in this condition of having connected, connection is made electrically [ both ] by IC memory card interface section prepared in the cell phone unit.

[0009]

[Example] Next, the example of this invention is explained with reference to a drawing. Drawing 1 is the perspective view showing the whole 1st example configuration of the cell phone unit of this invention. this cell phone unit 1 shows the example constituted as the so-called fold-up mold telephone equipment, and combines it with the soffit section of the main case 2 which carried out the configuration of a near core box flatly, and this main case 2 with a hinge 4 -- having -- the main case 2 -- receiving -- \*\*\*\* -- it consists of flat tabular subcases 3 by which a rotation location is carried out between a direct condition and the front location condition of the main case. Let the width-of-face dimension and thickness dimension of this subcase 3 be the dimension of abbreviation identitas at the width-of-face dimension and thickness dimension of IC memory card which are used abundantly in recent years. In addition, especially the linear dimension of this subcase 3 is not limited. And an antenna 5, an earphone 6, a display 7, and the key section 8 including various switches are arranged by said main case 2, and the telephone transmitter 9 is arranged by the subcase 3. Moreover, the external connector 10 of the same specification as IC memory card connector used for the above mentioned IC memory card is arranged by the point of said subcase 3.

[0010] Drawing 2 is the block diagram showing the internal-circuitry configuration of said cell phone unit, and has given the same sign to the part corresponding to drawing 1 . This cell phone unit is equipped with the wireless section 11, the baseband circuit section 12, the above mentioned antenna 5, an earphone 6 and a display 7, the key section 8, a telephone transmitter 9, IC memory card interface section 13 connected to said external connector 10, and the control section 14 for controlling said each part as a circuitry element.

[0011] The wireless section 11 processes the RF signal of a control signal or a call signal transmitted and received by minding the radio telephone equipment and wireless circuit which counter when radiocommunicating. Moreover, the baseband circuit section 12 includes the store circuit for memorizing the sign which modulates and restores to baseband signaling to said wireless section 11, processes amplifying the signal over said earphone 6 and telephone transmitter 9 etc., and is sent and received between the telephone equipment which counters. The key section 8 functions as a control unit which performs a dial and other key inputs. A display 7 consists of annunciators of liquid crystal etc., such as a drop of a figure or an alphabetic character, and LED, etc., in order to display input and control information in visible to the key input and input signal from the key section 8.

[0012] Moreover, it is constituted and IC memory card interface section 13 is connected between the external connectors 10 and control sections 14 which are constituted as the above mentioned IC memory card connector so that interface actuation by the control condition specified as IC memory interface agreement, for example, a PCMCIA interface, among external instruments, such as a data communication equipment mentioned later, may be performed. A control section 14 is constituted so

that selection of the wireless circuit to the wireless section 11, starting, transmission and reception of data, the transmission and reception of a call and a control signal to the baseband circuit section 12, the visible display control to a display 7, control of the key input information inputted from the key section 8, control of IC memory card interface section 13, and control of the whole cell phone unit, such as control to an earphone 6 or a telephone transmitter 9, may be performed.

[0013] In the cell phone unit 1 of this configuration, since the communication link by the usual call can be performed completely like an old cell phone unit, that explanation is omitted. After setting to the usual talk state which opened the subcase 3 of a cell phone unit 1 to the main case 2 with the hinge 4 on the other hand as shown in drawing 1 when this cell phone unit is connected to an external instrument and data communication etc. is performed, as shown in drawing 3, the point of the subcase 3 is inserted in the IC memory card slot 101 in which it is prepared by the external instruments 100, such as a personal computer. The personal computer in recent years is equipped standardly, IC memory card connector (not shown) is arranged in the pars basilaris ossis occipitalis of that slot, and this IC memory card slot 101 is connected to CPU built in the external instrument 100.

[0014] Therefore, by inserting the point of the subcase 3 of a cell phone unit 1 in the IC memory card slot 101 of a personal computer 100, fitting of the external connector 10 of a cell phone unit 1 and the connector in this IC memory card slot 101 is carried out, both are connected electrically, and the control section 14 of a cell phone unit 1 is connected to CPU of a personal computer 100 through IC memory card interface section 13. By this, by a control section's 14 recognizing that the cell phone unit 1 was connected to the personal computer 100 through IC memory card interface section 13, and performing wireless circuit startup control for performing IC memory card mode-of-operation setting out and wireless data transmission according to the control signal about the communication link from a personal computer 100 henceforth, direct continuation of a cell phone unit 1 and the personal computer 100 will be carried out, and wireless data transmission will be performed.

[0015] On the occasion of this wireless data transmission, the actuation beforehand defined by the key section 8 in a cell phone unit 1 performs dispatch or arrival, and starting of operation is performed. A control section 14 performs wireless line control with the procedure defined to the wireless section 11 by assignment from the key section 8, establishes a circuit, and performs control of access (it is a display etc. as a result of receiving inquiry demand input / demand input display and an inquiry demand) to a database henceforth. In this case, database access information is displayed on a display 7.

[0016] Thus, in the cell phone unit 1 of this example, electric and mechanical connection between a cell phone unit 1 and a personal computer 100 is realized by electrical connection operation of IC memory card interface section 13 and an external connector (IC memory card connector) by inserting the point of the subcase 3 in the IC memory card slot 101 of a personal computer 100. therefore -- while an adapter like before is unnecessary and the portability is improved -- as a mobile-computing terminal -- " -- always -- /-- it becomes possible to correspond to the wireless data service needs "anywhere.

[0017] Drawing 4 is the appearance perspective view of cell phone unit 1A of the 2nd example of this invention. In addition, the same sign is given to the part equivalent to the 1st example. This example forms the key section 8 in the subcase 3, and attains enlargement of the area of the display 7 of the main case 2. That is, it is in the inclination which the display information on a display increases with diversification of mobile-computing service, and when the area of a display is small, it becomes difficult to display on a display the content of a display which receives a limit also in the contents of a display (an alphabetic character, notation, etc.), and is needed for them collectively. Thus, the content of a display cannot be indicated by package, but implementation of a mobile-computing function will become difficult in the display of the specification to which the display digit and the display line count were limited.

[0018] So, in this example, in the 1st example, the key section 8 prepared in the main case 2 was formed in the subcase 3, and the display 7 is formed all over the abbreviation for the main case 2 in order to increase the area of a display 7. Moreover, in this example, the key section 8 is constituted from a switch of the flat mold using a touch screen film so that it may satisfy the thickness dimension of IC memory card in the subcase 3, and the thing of a configuration of indicating a key name by printing etc. on that

front face is used.

[0019] thus -- constituted cell phone unit 1A -- the activity -- facing -- the 1st example and abbreviation -- data communication with a personal computer is realizable with the same procedure. In this case, since there is a possibility that the key section may be located in a slot and that actuation may become impossible when the subcase of a cell phone unit is inserted in IC memory card slot of a personal computer, as shown in drawing 5, it is required that the key section 8 should be arranged in the field by which a penetration location is not carried out into the IC memory card slot 101 of a personal computer 100. Or you may constitute so that the actuation key in which it is prepared by the personal computer 100 may be substituted for actuation of the key section 8 in cell phone unit 1A and it may be performed. Moreover, after operating the key section 8 of cell phone unit 1A and establishing a circuit previously, cell phone unit 1A may be connected to a personal computer 100, and you may constitute so that a communication link may be controlled by actuation of a personal computer henceforth. Thereby, in this cell phone unit 1A, the digit count and line count of a display in a display 7 can be increased, and it becomes possible to realize a mobile-computing function.

[0020] Moreover, the key section 8 is constituted from a touch screen film 21 and liquid crystal equipment 22, and you may make it constitute the liquid crystal equipment 22 of a parenthesis as partial 7A of a display 7 further as a configuration of the key section 8 prepared in the subcase 3, as shown in drawing 6. That is, the key which arranges liquid crystal equipment 22 with a bigger area than this in piles, and consists of touch screens 21 using this liquid crystal equipment 22 is displayed on the touch screen film 21, and the key section 8 is constituted so that the cross-section structure of meeting drawing 7 at an A-A line may be shown. Moreover, this liquid crystal equipment 22 consists of using independently as display 7A. If it does in this way, this liquid crystal equipment 22 can constitute as a display 7 and a display with an area big very in one, and it will become possible to increase further the digit and line which can be displayed of it.

[0021] In addition, although each of said example shows the example which considered the subcase 3 as the foldable configuration to the main case 2, it is the same, or does not have distinction of the case of the main \*\*, may form some cases of one apparatus in the width-of-face dimension and the thickness dimension of IC memory card, may arrange IC memory card connector in the part, and may constitute this possible [ insertion ] in the IC memory card slot of an external instrument also from telephone equipment of a configuration of pulling out a subcase from the main case. Moreover, although said example shows the example of a personal computer as an external instrument, it cannot be overemphasized that it can constitute as a connectable cell phone unit to various devices equipped with IC memory card connector, such as a word processor and an electronic notebook.

[0022]

[Effect of the Invention] A cell phone unit and an external instrument are directly connectable with IC memory card connector by this invention having prepared IC memory card connector in some cases, and equipping the interior of a case with IC memory card interface section, as explained above, and inserting in IC memory card slot which prepared a part of this case in the external instrument, and making connection with an external instrument by IC memory card connector, and taking both adjustment by the interface section. Thereby, it is effective in the smooth information management corresponding to wireless-data-transmission service needs being realizable.

[0023] Moreover, this invention folds up a case to the main case and this main case, or constitutes it from a withdrawal subcase. Since this subcase is formed in a width-of-face dimension equal to IC memory card, and a thickness dimension and IC memory card connector is arranged in the point of this subcase On the occasion of anticipated use, it can use as a small cell phone unit, and a communication link can be realized by the same actuation as telephone equipment usual in the condition of having connected the subcase to the external instrument, at the time of data communication.

[0024] Furthermore, by preparing a display throughout the abbreviation for the front face of the main case, and preparing the key section for actuation in the front face of a subcase, the area of a display can be increased and it can respond to the increment in the display information in the mobile-computing service in recent years. In this case, it has a display in the front face of the main case, and has a display

also in the front face of a subcase, and the area of a display can be further increased with constituting this display so that it may function as the key section.

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[Translation done.]